

ABSTRACT

The McCall-Donnelly High School learning community defines “A Next Generation Learning Environment” as a school where:

- students are put at the center of the learning process and are engaged in constructive learning experiences,
- lessons are vigorous and relevant to the real world and reflect the knowledge and skills needed for success in a post-secondary education or career as outlined in the CCSS,
- technology enhances and maximizes authentic learning opportunities for students to ensure they have access to the necessary tools and knowledge to be successful in the 21st century, and
- instructional practices reflect the shifting role of the teacher to facilitator.

This project will create a 1v1 Next Generation Learning Environment at MDHS to include 300 iPads to be given to all students at MDHS, Tough Case covers for the iPads, and funding for iPad applications and eBooks to be accessed and utilized by students in their classes every day. The project will be student-driven by an existing iClub, a group of about fifty students (not including incoming freshmen) who will pilot the extensive use of the devices as instructional support tools in all of their classes, using the iPad for notes, eTexts, presentations, projects, and other resource utilization in the classroom. iClub students will also participate in an interactive media course taught by an MDHS technology instructor, in which they will learn both how to better utilize the iPad in school and to create an app of their own. This iClub will then work with teachers and other students to streamline the use of the devices to make them as effective as possible with the ultimate goal of changing the way all students at MDHS “do school.”

In December 2012, MDHS junior Brooke came to see Mr. Thomas asking for an iPad. He offered to give her one but only on the condition that she use it to answer the question, “How could this technology change the way students ‘do school’?” During the rest of the year, Brooke worked on answering this question. Taking the lead on the project, Brooke came up with the following answer:

As a junior, I began the student component of the new generation of learning at MDHS. We plan to change how kids “do school” through a student-teacher collaboration involving hands-on learning and integrating technology into everyday classrooms. As we progress, this student-driven program will create a more effective learning environment and a higher level of education.

This grant would fund Brooke’s vision of a Next Generation Learning Environment in which student-centered learning occurs constantly and is in fact student-driven. This project enables students to teach themselves, other students, and teachers what to do and how to do it with the new technology they will use each and every day to engage themselves and raise academic achievement. As Brooke and other students learn more about the functionality of the iPads as a primary tool and resource in classrooms, their input will enable the project to be replicated in other schools and classrooms across the state transforming education in Idaho to cutting edge in the use of technology aided learning.

EDUCATIONAL NEED AND GOALS

Over the past few years McCall-Donnelly High School has transitioned from a good school to a great school. MDHS has exceeded the rising expectations of the No Child Left Behind Act every year since the law's implementation. MDHS is an Idaho Five Star School and has also been recognized by the Idaho State Board of Education for excellence in academic achievement. Additionally, MDHS has been included in top schools lists in *Newsweek*, *US News and World Report*, and *School Match*. In partnership with the University of Idaho, MDHS houses the state's largest per-capita on-campus dual credit program. Finally, MDHS offers seven Advanced Placement courses and four professional-technical programs.

This narrative is not about a needs improvement school. It is ultimately about one thing: how to make good schools great and great schools even better. It's about an organization producing sustained results, but realizing the challenge of "Great is Good." As John Wooden, UCLA coach, said, "Failure to change is often just stubbornness that comes from an unwillingness to learn, an inability to realize that you're not perfect. There cannot be progress without change." While MDHS recognizes its current advantages, this project embodies the change necessary for continued progress.

Currently, McCall-Donnelly High School has the following infrastructure to support the move to a 1v1 Next Generation Learning Environment in 2013-2014:

- **Technology:** A robust gigabit network with multiple fiber optic WAN links, excellent server capacity, and enterprise class WiFi network capable of handling a 1v1 mobile device implementation, and a new high-end Internet filter that can accommodate increased bandwidth usage and provide flexible control to educational resources.
- **Human resources:** A skillful and talented faculty/staff in place to transition to a 1v1 Next Generation Learning Environment. The technology department is composed of a full-time network administrator and a computer technician. The principal has a mathematics/computer science degree. All teachers are highly qualified and have been trained to use the standard classroom software and hardware, including web page editors, document cameras, mobile laptop carts, and multimedia projection systems. Additionally, all teachers have received training in Robert Marzano's Instructional Strategies, Rick Stiggins's Assessment for Learning, and Charlotte Danielson's Evaluation Model.
- **System:** A calendar which is systematically set up to go to a 1v1 learning environment in 2013-2014. The school calendar includes six teacher training days and input as to what those training days will cover which often includes technology-related topics. All faculty members have daily ninety-minute prep periods allowing sufficient time to learn, practice, and plan for the use of technology.
- **Students:** Student leaders and ambassadors- eager to be engaged in the project allowing for a degree of student voice and choice- who are willing to participate in authentic learning activities. These students are the initial members of the iClub.

The project will affect our school achievement and climate data which is how we will measure the success of the project. Our current and past school achievement, climate, and accreditation data are available on our website www.mdsd.org/MDHS/About Us.

Brooke articulates the needs and goals of the project from a student's perspective:

Being a student at MDHS is hard work but rewarding. Homework, tests, and extracurricular activities consume our life. The traditional teaching style of hand-written notes and hard-back book assignments has stayed stagnant since before my parents were in high school. For today's learning needs, that is not enough. I wanted a new way to study for tests, finish book assignments, and take notes. Last January, the principal of MDHS gave me an iPad and challenged me to answer the question, "How can we do school differently?" The iPad was beneficial for note-taking with the apps Evernote and Educreations, having classroom references readily available like the periodic table and calculator, creating flashcards and PowerPoints for studying, and having many of my textbooks in one convenient and compact place. Because of my personal success with the iPad, I want other students to have the opportunity to experience the benefits of using an iPad.

Students throughout the school wanted an iPad after they saw how I incorporated it into my classes. I went to the technology teacher in our school and asked her, "How do I help other students receive the same experience I did through using the iPad?" The technology teacher and I brainstormed and established the First Generation iClub. The club allows students who want to integrate the iPad into their education the opportunity to do so. In order to be a member of the club, students must use iPad technology in their classes, have collaborative meetings with teachers demonstrating what apps/programs work for them, and teach other students who are interested in iPad technology. 50 students - ranging from special needs, athletes, ELL, to high academic students - have signed up for the club, and more students are still signing up because they know having an iPad in their hands will improve how they "do school."

The next step was getting support from the teachers. With the help of my history teacher, I planned a presentation demonstrating how I used the iPad in my classes. After presenting the iPad's potential, I had the teachers on my side. I presented a table representing three essential components for learning: student's needs, teacher's needs, and textbooks (eBooks). I showed the teachers the note taking applications, the eBooks, and numerous reference tools that would be useful in several classes. After the presentation, teachers asked me to teach them what I learned and how they could include technology in their classroom. With the iClub in place, teachers on board, and students excited to use iPads, the way MDHS "does school" is ready for change.

Pencil and paper note taking is not enough for success these days. Using technology to solve problems is the way students need to learn to be successful in today's world. Students and teachers who collaborate through the iPad is the new way of learning. Receiving the grant and buying the iPads for students who want to use them in their education will allow us "to do school differently."

SCOPE AND SEQUENCE

Planning and Implementation:

Phase 1 (complete): MDHS began the process of transitioning to a 1v1 Next Generation Learning Environment with an initial pilot project. The initial pilot project included installing a parallel open access wireless network where students could connect personal devices including laptops, iPods, cell phones, etc. In addition, MDHS purchased wireless laptop carts (thirty devices each), an iPad cart, and provided teachers with professional development opportunities in using the laptops and iPads. The community also supported this endeavor with the McCall-Donnelly Education Foundation funding a grant to provide poetry eBooks for use in English classes and a \$12,000 grant to purchase STEM Technology Probeware for use in science classes.

Phase 2 (2012-13 complete): Following this initial pilot project, MDHS teachers and a small demo group of students received iPads during the 2012-2013 school year. These students received an iPad and were asked to answer the question, “How could this technology change the way students ‘do school’?” MDHS junior, Brooke, took the lead on this, doing initial research on which student apps, tools, and other cloud-based technologies worked best for her in the classroom for note-taking, presentations, projects, etc. She then began researching the costs and capabilities associated with the utilization of digital content (mainly school eTexts).

Phase 3 (Spring 2012-Fall 2013): From Brooke’s initial project, the iClub was born, and about fifty students (25% of MDHS enrollment) have already signed up. The iClub will be student-driven and will pilot the extensive use of the devices as instructional support tools in all classes, using the iPad for notes, eTexts, presentations, projects, and other resource utilization in the classroom. Students will do the majority of the “heavy-lifting” in terms of finding and testing iPad apps and learning to navigate and utilize digital content/texts with the coaching and facilitation of MDSD technology instructors and other content area teachers. Most iClub students will participate in an interactive media course taught by an MDHS technology instructor in which they will learn and teach each other both how to better utilize the iPad in school and to create an app of their own. This iClub will then meet with teachers monthly to determine and teach what apps, tools, and other resources work best for all students and to help teachers to further integrate these resources into their curricula, streamlining the use of the devices to make them as efficient and effective as possible with the ultimate goal of changing the way students “do school.” As iClub members increasingly use the iPad in the classroom, more students will be encouraged and welcome to join the club throughout the first semester. As they join, they will be given an iPad (there will always be one available) and will participate in all activities and meetings associated with the club.

Phase 4 (Spring 2014-Fall 2015): With the foundational work of the iClub, the scope of the overall project is to ultimately have an iPad in the hands of every student in every classroom and to give them the skills they need to use the device in every aspect of the learning process, effectively making MDHS a 1v1 Next Generation Learning Environment. The iPads will be a resource for each student to use at MDHS in addition to existing different-purpose workstations (desktop labs, laptops, and ipad carts). Students would take their iPads with them after graduation to continue use in college and/or in the workforce.

Involvement: This project focuses on students as leaders. Students will be involved in and lead the iClub and will be responsible for meeting with and training teachers monthly about how students can use the devices to learn in a 21st-century classroom. Teachers, administrators, and technology staff will provide support to students where needed and welcome the use of iPads in the classroom. In support of the program, McCall-Donnelly School District has already allocated funds to provide a stipend for the iClub advisor. iClub members will publish their findings about what works best to be used in training teachers and students who receive an iPad to use in their classes. Because the project is student-centered and student-driven, student involvement will ensure true integration of technology into instruction, effectively changing how students learn in a Next Generation Learning Environment.

Preparation: To become members of the iClub, students are required to have a parent signature stating he or she will support his or her student involvement in the club and know the rules and guidelines associated with being a member (similar to Booster Club parents supporting their student athletes). As members of the iClub, students will be given an iPad and case and will meet at the beginning of the school year to review the rules and guidelines for being in the club. These rules and guidelines are in place to ensure that the devices are used to increase academic achievement and really change the way kids learn in school. As members of the iClub, students must use iPad technology in their classes, have collaborative meetings with teachers demonstrating what apps/programs work for the students in the teacher's program, and teach other students who are interested in iPad technology.

During the 2012-2013 school year, about half of the teachers (anyone who wanted one) received an iPad to individually explore the capabilities of using the devices in the classroom. MDSD provided a multi-session, comprehensive iPad training for teachers in the fall 2012 and plans to offer more professional development on the use of iPads in the classroom in 2013-2014 and beyond.

MDSD realizes there may be hidden cost obstacles associated with the project but has allocated funds to meet these needs. The district has earmarked monetary resources as contingency funds to support this 1v1 Next Generation Learning Environment grant. The district also has a technology committee with two MDHS members to support technology projects in schools.

Evaluation: MDHS has ten years of linear data on ISAT scores, AP test scores, ACT and SAT scores, and student fail rate (in individual classes). After the project is implemented, MDHS will conduct a comparison average analysis of student data to past years before the project was implemented. MDHS accumulates and analyzes all of this data yearly. MDHS also conducts school climate surveys because educators appreciate the importance of school climate. School climate refers to the quality and character of school life and includes an assessment of major spheres of school life: safety, relationships, environment, teaching, and learning. Because this project will significantly impact many of these spheres, MDHS will also analyze climate data and do a comparison analysis of school climate before and after project implementation. Finally, the iClub will present their work to the school board, the M-D Education Foundation board, faculty, staff, and parents, which will add to the authenticity of the project for all students involved.

SUSTAINABILITY AND SCALABILITY

MDHS technology teachers, technology staff, principal, and students researched and received bids on iPads, Tough Case covers, apps and resources, and eTexts. With all of these costs in place, we determined the cost per student at \$500. MDHS has also identified other funding partners for ongoing support of the project. The McCall-Donnelly Education Foundation has funded technology projects for our district and school and has expressed a continued desire to do so. On June 10, 2013, the McCall-Donnelly school board approved the application for this grant and has also expressed a desire to support these efforts at MDHS in the future. Finally, individual academic departments at MDHS have allocated at least \$100 of their yearly budget for research and purchase of classroom apps.

MDHS is positioned to move to a 1v1 Next Generation Learning Environment with the vision being to view a student's iPad as a consumable. After the completion of Phase 4 of the project, students at MDHS will have an iPad to use in school and to take with them after graduation, enabling them to do school and even life differently. All members of incoming freshman classes will receive iPads. MDHS is financially positioned to purchase the necessary iPads, covers, apps, and eTexts yearly for incoming freshmen, seventy per year (one for each student plus 10%) at a total of \$50,000. The district has set aside contingency funds of \$45,000-\$50,000 per year by adjusting course offerings and graduation requirements to absorb a current teacher who is retiring.

The iClub will help develop and support blended learning approaches and work to incorporate open license tutorials and courseware into traditional classroom-based courses. This project will "utilize funds so that programmatic changes occur within the school culture and community that will have a lasting impact," effectively changing the way students learn in school. The iClub will produce and publish reports about best practices for students and teachers about iPad use in the classroom. These reports can be used for future students and teachers at MDHS and throughout Idaho schools. With this project, students take ownership of their learning and engage in learning how to actively participate in a Next Generation Learning Environment. These skills are needed to succeed in 21st-century post-secondary educational or career pursuits, the main goals of the CCSS.

The MDHS Next Generation iClub and move to 1v1 is scalable to any Idaho school. By first creating the necessary infrastructure, then identifying three to four students who receive an iPad and assigning a teacher mentor, those students can tackle the same question for their school that Brooke worked on answering for MDHS: "How could this technology change the way students 'do school'?" After the initial work on this question, students form an iClub made up of other students eager to tackle this same question. iPad use is built on the idea that the iPad internal memory be divided into three categories: student needs, eTexts and references, and teacher instructional tools. With students driving the research and implementation and meeting with teachers regularly, all parties can determine what works best and actively use it in the classroom. With students as leaders with voice and choice in what they do and how they do it, the project changes how everyone learns and teaches into a Next Generation Learning Environment. Because students will leave MDHS knowing how to effectively use their iPads, they will be able to transfer these learning skills to a college academic setting or to the workplace.

BUDGET NARRATIVE

The project amount requested involves an initial outlay of \$150,000. Planning for 300 students, this amount covers the following materials for each student: one base model iPad2 (available in ten-packs at \$379 per unit); one industrial Tough Case cover with customization (\$31 bid price per unit – well below the \$79.99 regular unit price); nine student apps (identified apps range from \$1.05 to \$10.59 for a total of \$50 per student, including a small contingency for more apps to be determined by next year’s iClub); and eTexts (available textbooks vary from \$9 to \$15 per year for a total of \$40). These costs add up to \$500.00 per student.

MDHS has bids on the iPads and Tough Case covers with a plan to begin purchasing these items in August 2013. Student apps will include note taking, calculator, and periodic table functions; these will be purchased upon receipt of the iPads. In early fall 2013, with teacher collaboration, MDHS will purchase available textbooks.

While we will rely on this technology grant to initiate our iPad program, there is support to continue the work beyond the scope of the grant. At its June meeting, the McCall-Donnelly School District Board of Trustees approved the high school’s grant bid for a1v1 Next Generation Learning Environment utilizing iPads and paved the way for future budget adjustments to continue the iPad program. In addition, the McCall-Donnelly Education Foundation has pledged support for MDHS technology projects and the high school departments will allocate \$100 from each department to research classroom apps. Over the years, the MDSD textbook adoption process, which operates on a six-year rotation, will investigate and incorporate eText purchases. At this time, available texts are the same price or cheaper per year in electronic format.

Qty	Item	Cost	Purchase By Date
100	iPads	\$37,900	September 30, 2013
300	iPad Tough Case covers	\$ 9,300	September 30, 2013
100	iPad applications	\$ 5,000	October 31, 2013
100	eTexts	\$ 4,000	October 31, 2013
100	iPads	\$37,900	January 31, 2014
100	iPad applications	\$ 5,000	February 28, 2014
100	eTexts	\$ 4,000	February 28, 2014
100	iPads	\$37,900	April 30, 2014
100	iPad applications	\$ 5,000	May 31, 2014
100	eTexts	\$ 4,000	May 31, 2014
	TOTAL	\$150,000	